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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/076,086

02/15/2002

John Mark Royle

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05/11/2006

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EXAMINER

AZAD, ABUL K

ART UNIT

PAPER NUMBER

2626

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/076,086	<b>Applicant(s)</b> ROYLE ET AL.	
	<b>Examiner</b> ABUL K. AZAD	<b>Art Unit</b> 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/04/03</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This action is in response to the communication filed on February 13, 2006.
2. Claims 1-20 are pending in this action.
3. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 6-8, 10-17 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Clark, Jr. et al. (US 3,697,703).

As per claim 1, Clark teaches, “a method for digitally generating sound from phase and amplitude information of a narrow bandwidth signal”, comprising:

“(1) receiving said amplitude information and said phase information of said narrow bandwidth signal” (col. 16, lines 29-60);

“(2) determining phase-derivative information from said phase information” (col. 13, lines 26-53);

“(3) applying frequency gain to said phase-derivative information” (col. 13, line 54 to col. 14, line 10);

“(4) summing results of step (3) with an audio wave carrier having an audio band frequency, and outputting control information that includes said results of step (3) imparted to said audio wave carrier” (col. 13, line 54 to col. 14, line 10);

“(5) controlling an oscillator with said control information, wherein said oscillator outputs frequency modulation information that varies with respect to said phase-derivative information”( col. 13, line 54 to col. 14, line 10); and

“(6) converting, at an output sample rate that is higher than said audio band frequency, said amplitude information and said frequency modulation information to an analog amplitude/frequency modulated speaker control signal” (col. 13, line 54 to col. 14, line 10).

As per claim 2, Clark teaches, “wherein said amplitude information and said phase information have an input sample rate that is lower than said audio band frequency, wherein step (3) comprises up-sampling said phase-derivative information to said output sample rate and applying said frequency gain to said up-sampled phase-derivative information, the method further comprising: (7) up-sampling said amplitude information to said output sample rate prior to step (6)” (col. 17, line 57 to col. 18, line 16).

As per claim 3, Clark teaches, “wherein step (7) further comprises filtering components of said input sample rate from said up-sampled amplitude information” (col. 15, lines 6-13).

As per claim 6, Clark teaches, “wherein step (3) comprises delaying said phase-derivative information to maintain coherence with said filtering” (col. 14, lines 29-65).

As per claim 7, Clark teaches, "further comprising scaling said amplitude information to system gain" (col. 14, lines 47-65).

As per claim 8, Clark teaches, "further comprising scaling said phase- derivative information to system gain" (col. 14, lines 18-28).

As per claim 10, Clark teaches, "wherein said amplitude information and said phase information have an input sample rate that is substantially equal to said output sample rate" (col. 13, lines 26-53).

As per claim 11, Clark teaches, "further comprising scaling said amplitude information to system gain" (col. 14, lines 47-65).

As per claim 12, Clark teaches, "further comprising scaling said phase- derivative information to system gain" (col. 14, lines 18-28).

As per claims 13-17 and 19-20, they are interpreted and thus rejected for the same reasons set forth in the rejection of claims 1-3.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark, Jr. et al. (US 3,697,703) as applied to claim 3 above, and further in view of Rotpla-Pukkila et al. (US 6,732,070).

As per claim 4 and 5, Clark does not explicitly teaches, "wherein said filtering comprises performing an interpolation operation on said up-sampled amplitude information and wherein said filtering comprises a two- step sinc low pass filter interpolation operation". However, Rotpla-Pukkila teaches, "wherein said filtering comprises performing an interpolation operation on said up-sampled amplitude information and wherein said filtering comprises a two- step sinc low pass filter interpolation operation" (col. 11, lines 29-43). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use teaching of interpolation in the invention of Clark because one ordinary skill in the art would readily recognize that provide a better quality wideband signal output.

2. Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark (US 3,697,703).

As per claims Clark does not explicitly teach, "wherein said input sample rate is approximately 200 Hz, said output sample rate is approximately 48.8kHz, and said audio band frequency is approximately centered around 680 Hz". Clark teaches input rate from 0-20kHz, and output sampling rate is 1 Hz to 48 kHz. (col. 38, lines 1-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use input sample rate is approximately 200 Hz, said output sample rate is approximately 48.8kHz, and said audio band frequency is approximately centered around 680 Hz because the choice of the sampling rate is routine experimentation and optimization in the absence of criticality.

Art Unit: 2626

***Contact Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abul K. Azad** whose telephone number is **(571) 272-7599**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richemond Dorvil**, can be reached at **(571) 272-7602**.

Any response to this action should be mailed to:

**Commissioner for Patents**

**P.O. Box 1450**

**Alexandria, VA 22313-1450**

Or faxed to: **(571) 273-8300**.

Hand-delivered responses should be brought to **401 Dulany Street, Alexandria, VA-22314** (Customer Service Window).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 4, 2006



Abul K. Azad  
Primary Examiner  
Art Unit 2626